

AMENDMENTS TO THE CLAIMS

Prior to the present communication, claims 1-31 were pending in the subject application. All claims currently pending and under consideration in the present application are shown below. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for establishing a connection through a carrier virtual network, ~~the carrier virtual network comprising layer one resources dedicated from at least one dedicating telecommunication network to the carrier virtual network that may be accessed by at least one accessing telecommunication network~~, the system comprising:

a carrier virtual network manager to manage the carrier virtual network,
wherein the carrier virtual network comprises layer one resources dedicated from
a plurality of dedicating telecommunication networks to the carrier virtual,
wherein the carrier virtual network is accessible by at least one accessing
telecommunication network, wherein the plurality of dedicating
telecommunication networks and the at least one accessing telecommunication
network each represent particular telecommunication networks of layer one
resources exclusive from the others and owned by a respective service provider,
and wherein the carrier virtual network[,] comprising:

a database of connection information regarding portions of the layer one
resources of the particular telecommunication networks dedicated to the carrier
virtual network by the plurality of dedicating telecommunication networks, the
connection information describing how a telecommunication connection may be

established using the portions of the layer one resources dedicated to the carrier virtual network;

a database of latency information for the layer one resources dedicated to the carrier virtual network, the latency information describing the latency associated with each of the layer one resources dedicated to the carrier virtual network;

a routing system to identify possible connections using the portion of the layer one resources dedicated to the carrier virtual network that would establish a connection required by a telecommunication order;

a query system to dynamically determine the total latency of an identified possible connection and to dynamically determine whether the total latency of an identified possible connection exceeds service latency level requirements of the telecommunication order;

a provisioning system to establish connections within the carrier virtual network based, in part, on the determinations of the query system; and

at least one dedicated connection between the carrier virtual network manager and the manager of each of the ~~at least one plurality of~~ dedicating telecommunication networks, the at least one dedicated connection being used to transmit latency information and connection information ~~for of the portions of the~~ layer one resources dedicated to the carrier virtual network, wherein the connection information and the latency information is transmitted from the network system manager to the carrier virtual network manager for inclusion in

the database of connection information and the database of latency information,
respectively.

2. (Currently Amended) The system of claim 1, further comprising[:] a carrier virtual network interface that is configured to carry out the processes comprising:

receiving receives connection information and latency information from the manager of each of the at least one plurality of dedicated telecommunication networks ~~with layer one resources dedicated to the carrier virtual network~~ via the at least one connection; and

inputting inputs the connection information and the latency information to the carrier virtual network manager for inclusion in the database of connection information and the database of latency information, respectively.

3. (Currently Amended) The system of claim 2, wherein the database of connection information comprises:

information identifying the available layer one resources of the accessing telecommunication network dedicated to the carrier virtual network; and

information identifying the layer one resources dedicated from the at least one plurality of dedicating telecommunication networks to the carrier virtual network.

4. (Currently Amended) The system of claim 3, wherein the database of latency information comprises:

latency information for each of the available layer one resources of the accessing telecommunication network; and

latency information for each of the layer one resources dedicated from the ~~at least one plurality of~~ dedicating telecommunication networks to the carrier virtual network.

5. (Currently Amended) The system of claim 3, wherein the database of connection information further comprises:

information identifying each of the at least one network connection between the layer one resources of the accessing telecommunication network and the layer one resources dedicated from the ~~at least one plurality of~~ dedicating telecommunication networks to the carrier virtual network.

6. (Currently Amended) The system of claim 5, wherein the database of latency information comprises:

latency information for each of the available layer one resources of the accessing telecommunication network;

latency information for each of the layer one resources dedicated from the ~~at least one plurality of~~ dedicating telecommunication networks to the carrier virtual network; and

latency information for each of the at least one network connection between the layer one resources of the accessing telecommunication network and the layer one resources dedicated from the ~~at least one plurality of~~ dedicating telecommunication networks to the carrier virtual network.

7. (Currently Amended) A method for establishing a telecommunication connection through a carrier virtual network within the service level latency requirements of a telecommunication service order, ~~the carrier virtual network comprising layer one resources dedicated from at least one dedicating telecommunication network to the carrier virtual network that may be accessed by another telecommunication network,~~ the method comprising:

maintaining a database of connection information ~~regarding that describes~~ the layer one resources available to the carrier virtual network, wherein the available layer one resources are dedicated to the carrier virtual network by a plurality of dedicating telecommunication networks, wherein the carrier virtual network is accessible by at least one accessing telecommunication network, wherein the plurality of dedicating telecommunication networks and the at least one accessing telecommunication network each represent particular telecommunication networks of layer one resources exclusive from the others and owned by a respective service provider;

maintaining a database of latency information for the layer one resources available to the carrier virtual network;

receiving at a manager of the at least one accessing telecommunication network connection information ~~for describing~~ the layer one resources available to within the carrier virtual network that are available to be connected to the at least one accessing telecommunication network, wherein the connection information is provided by a manager of the carrier virtual network;

storing the connection information at into the database of connection information;

receiving at the manager of the at least one accessing telecommunication network latency information [or]describing the layer one resources available to within the carrier virtual network that are available to be connected to the at least one accessing telecommunication network, wherein the connection information is provided by respective managers of the plurality of telecommunication networks;

storing the connection information at into the database of latency information;

identifying connections using layer one resources available to the carrier virtual network that would fulfill the telecommunication service order using the database of connection information;

determining which of the identified connections meet the latency requirements of the telecommunication service order using the database of latency information; and

provisioning an identified connection that meets the latency requirements of the telecommunication service order.

8. (Currently Amended) The method for establishing a telecommunication connection of claim 7, wherein maintaining a database of connection information regarding the layer one resources available to the carrier virtual network comprises:

maintaining connection information for the layer one resources dedicated to the carrier virtual network from the at least one plurality of dedicating telecommunication networks; and

updating the connection information for the layer one resources dedicated to the carrier virtual network when new connection information is received.

9. (Original) The method for establishing a telecommunication connection of claim 8, wherein maintaining a database of connection information regarding the layer one resources available to the carrier virtual network further comprises:

maintaining connection information for the layer one resources of the accessing telecommunication network; and

updating the connection information for the layer one resources of the accessing telecommunication network when new connection information is received.

10. (Currently Amended) The method for establishing a telecommunication connection of claim 8, wherein maintaining a database of latency information for the layer one resources available to the carrier virtual network comprises:

maintaining latency information for the layer one resources dedicated to the carrier virtual network from ~~at least one~~ the plurality of dedicating telecommunication networks; and

updating the latency information for the layer one resources dedicated to the carrier virtual network when new latency information is received.

11. (Currently Amended) The method of establishing a telecommunication connection of claim 9, wherein maintaining a database of latency information for the layer one resources available to the carrier virtual network comprises:

maintaining latency information for the layer one resources dedicated to the carrier virtual network from ~~the at least one~~ plurality of dedicating telecommunication networks;

maintaining latency information for the layer one resources of the accessing telecommunication network;

updating the latency information for the layer one resources dedicated to the carrier virtual network from the ~~at least one plurality of~~ dedicating telecommunication networks when new latency information is received; and

updating the latency information for the layer one resources of the accessing telecommunication network when new latency information is received.

12. (Currently Amended) The method for establishing a telecommunication connection of claim 11, wherein maintaining a database of connection information for the layer one resources available to the carrier virtual network further comprises:

maintaining connection information regarding the network connections between the layer one resources of the accessing telecommunication network and the layer one resources dedicated to the carrier virtual network from the ~~at least one plurality of~~ dedicating telecommunication networks.

13. (Currently Amended) The method for establishing a telecommunication connection of claim 12, wherein maintaining a database of latency information for the layer one resources available to the carrier virtual network further comprises:

maintaining latency information for network connections between the layer one resources of the accessing telecommunication network and the layer one resources dedicated to the carrier virtual network from the ~~at least one plurality of~~ dedicating telecommunication networks.

14. (Original) The method for establishing a telecommunication connection of claim 7, further comprising:

receiving notice if a provisioned connection is impaired;

identifying alternative connections using the layer one resources available to the carrier virtual network that would fulfill the telecommunication service order using the database of connection information;

determining which of the identified alternative connections meet the service level latency requirements of the telecommunication service order using the database of latency information; and

re-provisioning the impaired connection to one of the identified alternative connections that meet the service level latency requirements of the telecommunication service order.

15. (Original) The method for establishing a telecommunication connection of claim 13, further comprising:

receiving notice if a provisioned connection is impaired;

identifying alternative connections using the layer one resources available to the carrier virtual network that would fulfill the telecommunication service order using the database of connection information;

determining which of the identified alternative connections meet the service level latency requirements of the telecommunication service order using the database of latency information; and

re-provisioning the impaired connection to one of the identified alternative connections that meet the service level latency requirements of the telecommunication service order.

16. (Original) The method for establishing a telecommunication connection of claim 15, wherein identifying alternative connections occurs prior to provisioning an identified connection.

17. (Original) The method for establishing a telecommunication connection of claim 16, wherein determining which of the identified alternative connections meet the latency requirements occurs prior to provisioning an identified connection.

18. (Original) The method for establishing a telecommunication connection of claim 15, wherein identifying alternative connections occurs simultaneous with identifying connections.

19. (Original) The method for establishing a telecommunication connection of claim 18, wherein determining which of the identified alternative connections meet the latency requirements occurs simultaneous with determining which of the identified connections meet the latency requirements.

20. (Currently Amended) At least one machine readable media containing machine readable code embodied thereon that, when executed by a computer, causes for causing a carrier virtual network system to perform a method for establishing a telecommunication connection through a carrier virtual network within the service level latency requirements of a telecommunication service order, ~~the carrier virtual network comprising layer one resources dedicated from at least one dedicating telecommunication network that may be accessed by another telecommunication network~~, the method comprising:

maintaining a database of connection information regarding that describes the layer one resources available to the carrier virtual network, wherein the available layer one resources are dedicated to the carrier virtual network by a plurality of dedicating telecommunication networks, wherein the carrier virtual network is accessible by at least one accessing telecommunication network, wherein the plurality of dedicating telecommunication networks and the at least one accessing telecommunication network each represent particular telecommunication networks of layer one resources exclusive from the others and owned by a respective service provider;

maintaining a database of latency information for the layer one resources available to the carrier virtual network;

receiving connection information for the layer one resources available to the carrier virtual network into the database of connection information;

receiving latency information or the layer one resources available to the carrier virtual network into the database of latency information;

utilizing the computer to identify identifying connections using layer one resources available to the carrier virtual network that would fulfill the telecommunication service order using the database of connection information; determining which of the identified connections meet the latency requirements of the telecommunication service order using the database of latency information; and provisioning an identified connection that meets the latency requirements of the telecommunication service order.

21. (Currently Amended) The at least one machine readable media of claim 20, wherein maintaining a database of connection information regarding the layer one resources available to the carrier virtual network comprises:

maintaining connection information for the layer one resources dedicated to the carrier virtual network from the ~~at least one plurality of~~ dedicating telecommunication networks; and updating the connection information for the layer one resources dedicated to the carrier virtual network when new connection information is received.

22. (Original) The at least one machine readable media of claim 21, wherein maintaining a database of connection information regarding the layer one resources available to the carrier virtual network further comprises:

maintaining connection information for the layer one resources of the accessing telecommunication network; and

updating the connection information for the layer one resources of the accessing telecommunication network when new connection information is received.

23. (Currently Amended) The at least one machine readable media of claim 21, wherein maintaining a database of latency information for the layer one resources available to the carrier virtual network comprises:

maintaining latency information for the layer one resources dedicated to the carrier virtual network from ~~at least one~~ the plurality of dedicating telecommunication networks; and

updating the latency information for the layer one resources dedicated to the carrier virtual network when new latency information is received.

24. (Currently Amended) The at least one machine readable media of claim 23, wherein maintaining a database of connection information for the layer one resources available to the carrier virtual network further comprises:

maintaining connection information regarding the network connections between the layer one resources of the accessing telecommunication network and the layer one resources dedicated to the carrier virtual network from the ~~at least one~~ plurality of dedicating telecommunication networks.

25. (Currently Amended) The at least one machine readable media of claim 24, wherein maintaining a database of latency information for the layer one resources available to the carrier virtual network further comprises:

maintaining latency information for network connections between the layer one resources of the accessing telecommunication network and the layer one resources dedicated to the carrier virtual network from the ~~at least one~~ plurality of dedicating telecommunication networks.

26. (Original) The at least one machine readable media of claim 25, the method further comprising:

receiving notice if a provisioned connection is impaired;
identifying alternative connections using the layer one resources available to the carrier virtual network that would fulfill the telecommunication service order using the database of connection information;
determining which of the identified alternative connections meet the service level latency requirements of the telecommunication service order using the database of latency information; and
re-provisioning the impaired connection to one of the identified alternative connections that meet the service level latency requirements of the telecommunication service order.

27. (Original) The at least one machine readable media of claim 26, wherein identifying alternative connections occurs prior to provisioning an identified connection.

28. (Original) The at least one machine readable media of claim 27, wherein determining which of the identified alternative connections meet the latency requirements occurs prior to provisioning an identified connection.

29. (Original) The at least one machine readable media of claim 26, wherein identifying alternative connections occurs simultaneous with identifying connections.

30. (Original) The at least one machine readable media of claim 29, wherein determining which of the identified alternative connections meet the latency requirements occurs simultaneous with determining which of the identified connections meet the latency requirements.

31. (Original) The at least one machine readable media of claim 20, the method further comprising:

receiving notice if a provisioned connection is impaired;

identifying alternative connections using the layer one resources available to the carrier virtual network that would fulfill the telecommunication service order using the database of connection information;

determining which of the identified alternative connections meet the service level latency requirements of the telecommunication service order using the database of latency information; and

re-provisioning the impaired connection to one of the identified alternative connections that meet the service level latency requirements of the telecommunication service order.